

Claims

1. A method for the combustion of fuel in a combustion chamber (12), in which

- fuel and combustion air are mixed, avoiding self-ignition, before entry into the combustion chamber (12),
- a first part (36) of the mixture (34) is introduced into the combustion chamber (12) in such a way that it circulates in the combustion chamber (12),
- further fuel is added to the circulation flow (46) of the first part (36) of the mixture (34) until heating up to ignition conditions is guaranteed, and
- at least one second part (38) of the mixture (34) is introduced into the combustion chamber (12) in such a way that it is injected essentially perpendicularly to the direction of the hot combustion gas (50) which is flowing away from the circulation flow (46), such that it mixes with said hot combustion gas (50), heats up and combusts until its exit from the combustion chamber.

2. The method as claimed in claim 1, characterized in that the fuel and the combustion air are mixed before entry into the combustion chamber (12), in such a way that the ratio of combustion air to fuel is higher than the average air/fuel ratio of the combustion in the combustion chamber (12).

3. The method as claimed in claim 1 or 2, characterized in that the first and/or second part (36, 38) of the mixture (34) of fuel and combustion air, there being at least one such second part, is introduced via a body (22) which is arranged centrally in the combustion chamber (12).

4. The method as claimed in claim 3,
characterized in that fuel is supplied in the form of
a combustion gas, and liquid fuel is also supplied via the

10. The method as claimed in one of the claims 1 to 9, characterized in that the first and/or the second part (36, 38) of the mixture (34) of fuel and combustion air, there being at least one such second part, are discharged into the circulation flow (46) and the combustion chamber (12) via at least one specially adapted nozzle (28, 28').

11. The method as claimed in one of the claims 1 to 10, characterized in that the circulation flow (46) is configured such that, of the total gas mass which is supplied during one time unit, approximately 5% to 25% and particularly between approximately 10% and 20% circulates in said circulation flow per time unit.

12. A device (10) for the combustion of fuel in a combustion chamber (12), in particular for carrying out the method as claimed in one of the Claims 1 to 11, comprising

- a mixing entity (22) for mixing fuel and combustion air, avoiding self-ignition, before entry into the combustion chamber (12),
- a first mixture discharge entity for introducing a first part (36) of the mixture (34) into the combustion chamber (12) in such a way that the first part (36) of the mixture (34) circulates in the combustion chamber (12),
- a fuel discharge entity (48) for supplying further fuel into the circulation flow (46) of the first part (36) of the mixture (34) until ignition conditions are present, and
- at least one second mixture discharge entity for introducing at least one second part (38) of the mixture (34) into the combustion chamber (12) in such a way that said second part (38), of which there is at least one, of the mixture (34) is injected essentially perpendicularly to the direction of the hot combustion gas (50) which is flowing away from the

circulation flow (46), such that it mixes with said hot combustion gas (50), heats up and combusts until its exit from the combustion chamber (12).

13. The device as claimed in claim 12,